

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An elevator controller comprising:

a main control unit for controlling running of an elevator,

wherein the main control unit ~~predictively~~ calculates a ~~continuous~~ predicted temperature state of a predetermined ~~componential equipment~~ component of the elevator, compares the predicted temperature state to a range of permitted temperature states, and changes at least one of a plurality of elevator travel parameters if the predicted temperature state is outside of the range, and performs an operation control of the component of the elevator based on a result of the comparison ~~the predicted temperature state such that the componential equipment does not become overloaded.~~

Claim 2 (Currently Amended): The elevator controller according to claim 1, further comprising:

a thermal sensing device that detects a temperature of the component ~~predetermined componential equipment~~; and

change amount input means for inputting a predetermined change amount concerning the component ~~predetermined componential equipment~~,

wherein the main control unit calculates a predicted value of a ~~continuous~~ temperature state of the ~~componential equipment~~ component using the temperature detected by the thermal sensing device and the change amount inputted by the change amount input means.

Claim 3 (Currently Amended): The elevator controller according to claim 2, wherein the predetermined change amount is a drive input amount for driving the component ~~predetermined componential equipment~~.

Claim 4 (Currently Amended): The elevator controller according to claim 3, wherein the ~~predetermined componential equipment~~ component comprises a power drive unit that drives a motor for causing a hoisting machine to rotate in response to a command from the main control unit, and the drive input amount comprises a current value of the power drive unit.

Claim 5 (Currently Amended): The elevator controller according to claim 2, wherein the predetermined change amount comprises a temperature rise amount of the component ~~predetermined componential equipment~~.

Claim 6 (Withdrawn - Currently Amended): The elevator controller according to claim 1, wherein the main control unit has a plurality of speed patterns and performs the operation control by selecting a speed pattern that prevents the component ~~predetermined componential equipment~~ from becoming overloaded.

Claim 7 (Withdrawn - Currently Amended): The elevator controller according to claim 6, wherein the main control unit comprises:

a first data table in which a car moving time and a predetermined change amount on the ~~componential equipment~~ component, which are determined by a car load and a speed pattern, are tabulated respectively using the car load and the speed pattern, depending on each moving distance;

candidate extracting means for extracting, based on a moving distance and a car load, all car moving times and change amounts corresponding to the respective speed patterns from the first data table as candidates;

predictive calculation means for predictively calculating continuous temperature states of the component ~~predetermined componential equipment~~ for the respective speed patterns, using the respective extracted change amounts;

allowable range confirming means for selecting speed patterns corresponding to those of the predictively calculated temperature states which are within a predetermined allowable range; and

speed pattern determining means for comparing car moving times corresponding to the respective selected speed patterns with one another and selecting a speed pattern corresponding to a minimum one of the moving times.

Claim 8 (Withdrawn - Currently Amended): The elevator controller according to claim 7, wherein the main control unit selects and sets a speed pattern minimizing a predetermined evaluation function that is defined by the continuous temperature state of the component ~~predetermined componential equipment~~ calculated using the change amount outputted from the first data table, and by a car moving time corresponding thereto.

Claim 9 (Withdrawn): The elevator controller according to claim 8, wherein the main control unit resets the evaluation function according to a predetermined time or a temperature state detected by the thermal sensing device.

Claim 10 (Currently Amended): The elevator controller according to claim 2, wherein the change amount of the component ~~predetermined componential equipment~~ comprises a time average.

Claim 11 (Withdrawn - Currently Amended): The elevator controller according to claim 1, wherein the main control unit calculates a continuous temperature state of the component ~~predetermined componential equipment~~ based on changes with time in one of statistics, namely, a number of starts of the elevator per unit time and a number of passengers on the elevator per unit time, and performs the operation control of the elevator based on the temperature state such that the ~~componential equipment~~ component does not become overloaded.

Claim 12 (Withdrawn - Currently Amended): The elevator controller according to claim 11, wherein the main control unit has a plurality of running modes in each of which a speed pattern is set according to a load within the car and a moving distance, and

the main control unit comprising:

a second data table in which an average change amount and an average waiting time, which are calculated from the statistics for each of the running modes, are respectively tabulated in accordance with the statistics and the running modes;

running result input means for inputting one of running results, namely, a number of starts per unit time and a number of passengers per unit time within a predetermined evaluation time segment;

candidate extracting means for extracting average change amounts and average waiting times corresponding to the respective running modes from the second data table based on the running result inputted from the running result input means;

predictive calculation means for predictively calculating continuous temperature states of the component ~~predetermined componential equipment~~ for the respective running modes using the respective extracted average change amounts;

allowable range confirming means for selecting running modes corresponding to those of the predictively calculated temperature states which are within a predetermined allowable range;

and running mode determining means for comparing average waiting times corresponding to the respective selected running modes with one another and selecting a running mode corresponding to a minimum one of the average waiting times.

Claim 13 (Withdrawn - Currently Amended): The elevator controller according to claim 11, wherein the main control unit has a plurality of running modes in each of which a speed pattern is set according to a load within the car and a moving distance, and

the main control unit comprising:

a second data table in which an average change amount and an average travel time, which are calculated from the statistics for each of the running modes, are respectively tabulated in accordance with the statistics and the running modes;

running result input means for inputting one of running results, namely, a number of starts per unit time and a number of passengers per unit time within a predetermined evaluation time segment;

candidate extracting means for extracting average change amounts and average travel times corresponding to the respective running modes from the second data table based on the running result inputted from the running result input means;

predictive calculation means for predictively calculating continuous temperature states of the component ~~predetermined componential equipment~~ for the respective running modes using the respective extracted average change amounts;

allowable range confirming means for selecting running modes corresponding to those of the predictively calculated temperature states which are within a predetermined allowable range;

and running mode determining means for comparing average travel times corresponding to the respective selected running modes with one another and selecting a running mode corresponding to a minimum one of the average waiting travel times.

Claim 14 (New): The elevator controller according to claim 1, wherein:

the control unit reduces at least one of a plurality of elevator travel parameters if the predicted temperature state exceeds a maximum of the range and increases at least one of the parameters if the predicted temperature state is below a minimum of the range.

Claim 15 (New): The elevator controller according to claim 14, wherein the elevator travel parameters comprise plural of acceleration, deceleration, jerk, and maximum speed.

Claim 16 (New): The elevator controller according to claim 1, wherein:

the control unit determines a plurality of sets of elevator travel parameters based upon comparing the predicted temperature state to the range, selects one of the sets based upon a comparison of one of the parameters in the sets, and controls operation of the elevator based upon the one set of travel parameters.

Claim 17 (New): The elevator controller according to claim 16, wherein the elevator travel parameters comprise plural of acceleration, deceleration, jerk, and maximum speed.

Claim 18 (New) A method of operating an elevator operating system, comprising:
using a temperature sensor to sense a temperature of a component of a drive system of the elevator;
calculating a predicted temperature state of the component of the drive system;
comparing the predicted temperature state to a range of permitted temperature states;
changing at least one of a plurality of elevator travel parameters if the predicted temperature state is outside of the range, and
controlling the component of the drive system based on a result of the comparison.

Claim 19 (New): The method according to claim 18, comprising:
reducing at least one of a plurality of elevator travel parameters if the predicted temperature state exceeds a maximum of the range; and
increasing at least one of the parameters if the predicted temperature state is below a minimum of the range.

Claim 20 (New): The method according to claim 1, comprising:
determining a plurality of sets of elevator travel parameters based upon comparing the predicted temperature to the range;
selecting one of the sets based upon a comparison of one of the parameters in the sets;
and
controlling operation of the elevator based upon the one set of travel parameters.